

IN THE CLAIMS:

1. (Canceled)

2. (Previously Presented) A process for preparing olefinic living polymers comprising polymerizing an olefinic monomer having 2 to 20 carbon atoms at a polymerization temperature of -20 to -100°C in the presence of a catalyst comprising:

(A-1) a hafnium-containing compound having one or two cyclopentadienyl backbones,

(B) a borane compound (B-1) of the formula (I):



wherein Ph is a phenyl group which may be substituted and

(C) an aluminum compound of the formula (III):



wherein R is a hydrocarbon group having 4 to 20 carbon atoms, Y is a halogen atom, an alkoxyl group, a trialkylsiloxy group, a bis(trialkylsilyl)amino group or a trialkylsilyl group, and n is 0, 1 or 2, to produce a polymer having a molecular weight distribution (Mw/Mn) of 1 to 1.3.

3. (Currently Amended) The process of Claim ~~1~~ or 2, |
wherein said polymerization temperature is from -30 to -80°C.

4. (Currently Amended) The process of Claim ~~1~~ or 2,
wherein said polymerization temperature is from -40 to -80°C.

5. (Canceled)

6. (Previously Presented) A process for preparing olefinic living polymers comprising polymerizing an olefinic

monomer having 2 to 20 carbon atoms at a polymerization temperature of -60 to -100°C in the presence of a catalyst comprising:

(A-2) a zirconium-containing compound having one or two cyclopentadienyl backbones,

(B) a borane compound (B-1) of the formula (I):



wherein Ph is a phenyl group which may be substituted, and

(C) an aluminum compound of the formula (III):



wherein R is a hydrocarbon group having 4 to 20 carbon atoms, Y is a halogen atom, an alkoxyl group, a trialkylsiloxy group, a bis(trialkylsilyl)amino group or a trialkylsilyl group, and n is 0, 1 or 2, to produce a polymer having a molecular weight distribution (Mw/Mn) of 1 to 1.3.

7. (Currently Amended) The process of Claim 5 ~~or~~ 6, wherein said polymerization temperature is from -60 to -80°C.

8. (Original) A process for preparing olefinic living polymers comprising polymerizing an olefinic monomer having 2 to 20 carbon atoms at a polymerization temperature of -20 to -100°C in the presence of a catalyst comprising:

(A-2) a zirconium-containing compound having one or two cyclopentadienyl backbones,

(B) a borane compound (B-1) of the formula (I):



wherein Ph is a phenyl group which may be substituted, or

a borate compound (B-2) of the formula (II):



wherein Ph is as defined above and X⁺ is a cation, and

(D) a titanium-containing compound.

9. (Previously Presented) A process for preparing olefinic living polymers comprising polymerizing an olefinic monomer having 2 to 20 carbon atoms at a polymerization temperature of -20 to -100°C in the presence of a catalyst comprising:

(A-2) a zirconium-containing compound having one or two cyclopentadienyl backbones,

(B) a borane compound (B-1) of the formula (I):



wherein Ph is a phenyl group which may be substituted, or

a borate compound (B-2) of the formula (II):



wherein Ph is as defined above and X^+ is a cation,

(C) an aluminum compound of the formula (III):



wherein R is a hydrocarbon group having 4 to 20 carbon atoms, Y is a halogen atom, an alkoxy group, a trialkylsiloxy group, a bis(trialkylsilyl)amino group or a trialkylsilyl group, and n is 0, 1 or 2, and

(D) a titanium-containing compound.

10. (Original) The process of Claim 8 or 9, wherein said titanium-containing compound is a titanium-containing compound having one cyclopentadienyl backbone.

11. (Previously Presented) The process of Claim 8 or 9, wherein at least one of said zirconium-containing compound having one or two cyclopentadienyl backbones (A-2) and said titanium-containing compound (D) contains an alkyl group.

12. (Previously Presented) The process of Claim 8 or 9, wherein said polymerization temperature is from -30 to -80°C.

13. (Previously Presented) The process of Claim 8 or 9, wherein said polymerization temperature is from -40 to -60°C.

14. (Currently Amended) The process of any of Claims ~~1~~₇ 2, ~~5~~₇ 6, 8 and 9, wherein Ph group in said formula (I) or (II) is a group substituted by 1 to 5 fluorine atoms.

15. (Currently Amended) The process of any of Claims ~~1~~₇ 2, ~~5~~₇ 6, 8 and 9, wherein Ph group in said formula (I) or (II) is a group substituted by five fluorine atoms.

16. (Previously Presented) The process of Claim 2, 6 or 9, wherein n in said formula (III) is 0.

17. (Previously Presented) The process of Claim 2, 6 or 9, wherein in said formula (III) n is 0 and R is an alkyl group having 4 to 8 carbon atoms.

18. (Currently Amended) The process of any of Claims ~~1~~₇ 2, ~~5~~₇ 6, 8 and 9, wherein said olefinic monomer is an α -olefin having 2 to 20 carbon atoms.

19. (Currently Amended) The process of any of Claims ~~1~~₇ 2, ~~5~~₇ 6, 8 and 9, wherein said olefinic monomer is an α -olefin having 2 to 10 carbon atoms.

20. (Currently Amended) The process of any of Claims ~~1~~₇ 2, ~~5~~₇ 6, 8 and 9, wherein said olefinic monomer is an α -olefin having 3 to 6 carbon atoms.

21. (Currently Amended) The process of any of Claims ~~1~~₇ 2, ~~5~~₇ 6, 8 and 9, wherein said polymerizing is carried out under the condition that the produced polymer is not precipitated.

22. (Currently Amended) The process of any of Claims ~~1~~₇ 2, ~~5~~₇ 6, 8 and 9, wherein said molecular weight distribution is from 1 to 1.2.